DOCUMENT RESUME

ED 287 272 EC 200 580

AUTHOR Campbell, Donald S.
TITLE Pause for Reflection. Teaching the Impulsive Student Reflective Problem-Solving with Self-Instruction Training.
SPONS AGENCY Ontario Dept. of Education, Toronto.
PUB DATE Dec 86
NOTE 11p.; Paper presented at the Annual Conference of the Ontario Educational Research Association (28th, Toronto, Ontario, Canada, December 5-6, 1986).
PUB TYPE Speeches/Conference Papers (150) -- Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Behavior Modification; Behavior Patterns; Cognitive Restructuring; *Conceptual Tempo; Deafness; Elementary Secondary Education; Foreign Countries; *Language Handicaps; Learning Disabilities; *Learning Strategies; Problem Solving; Self Control; Student Characteristics; Time Factors (Learning)
IDENTIFIERS *Self Verbalization

ABSTRACT

Typical characteristics of impulsive children and adolescents are reviewed and strategies for changing this behavior are considered. Self-instruction training requires the child to verbalize a given problem, alternative approaches to resolution, and attentional strategies. Language becomes a mediator for self-monitoring and regulation. Cognitive behavior modification approaches may use problem solving activities, modeling, self-verbalization, and training and feedback. The need for giving interventions time to succeed is emphasized. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED287272

PAUSE FOR REFLECTION

Teaching the Impulsive Student Reflective Problem-Solving with Self-Instruction Training

Donald S. Campbell, Ed.D.
Faculty of Education
Queen's University
Kingston, Ontario

Paper presented at the 28th Annual Conference of the Ontario Educational Research Association, Toronto, 5-6 December 1986.

Portions of research reported here were funded under contract by the Ministry of Education, Ontario. This paper reflects the views of the author and not necessarily those of the Ministry.

EC 200580

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Donald S. Campbell
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

> What they should learn first is not the subjects ordinarly taught, however important they may be; they should be given lessons of will, of attention, of discipline; before exercises in grammar, they need to be exercised in mental orthopedics; in a word they must learn to learn.
>
> Alfred Binet, 1908

Starting from scratch

Infants and young children typically do not pause and think before acting. This tendancy to be impulsive is an obvious characteristic of children that makes them childish and a wonder to parents and teachers. Young children give little or no thought to possible outcomes or consequences of their actions for the simple reason that so many acts are a first. They are starting from scratch or, in Piagetian terms, new schemata are being built through assimilation. Their world is one of play and exploration, filled with trial, error and consequences. These acts and consequences are what make experience and the beginnings of cognition for each child. As the child builds experience of the causal links that determine the relationships among people and things, the child begins to have the cognitive tools to move away from random, impulsive thought toward more ordered, reflective thought.

Language is a catalyst to this process in a number of important ways. For one, language allows another person to add to the child's own cognitive tools and experience. An adult can verbally convey to the child a causal relationship in cases where it is not known, remembered or generalized by the child. Second, language becomes a third symbol system for the child to manipulate thought along with the enactive and iconic systems. Action and consequence can be thought through by the child using the power of abstraction verbal language can provide. In effect, in both cases language provides a substitute for direct experience. It is hypothesized that through such processes language becomes a mediator of a child's actions upon the world, and reflective thought develops.

The role of language as a mediator of behaviour has been extensiveley discussed in both theoretical and clinical literature (e.g. Vygotsky, 1962; Meichenbaum and Goodman, 1971; Mahoney and Thoreson, 1974; Meichenbaum and Asarnow, 1979). Through a three-stage process, behaviour eventually comes under the control of mediated language. In the first stage, the young child is listening to the overt speech of parents and other supervising adults. It is intended to

guide and govern the child's behaviour. The parent uses language to explain actions and consequences. ("If you rock too far back in that rocking chair you will fall over and hurt yourself.") In the second stage, children model the adults' language through overt speech, thereby monitoring and regulating their behaviour according to learned causal relationships. ("If I tip back to far on this box I might fall over, so I had better not.") In the older child and adult, overt speech becomes covert as language becomes more internalized and serves as a mediator for reflective thought. (One can easily loose balance on objects that don't stay still, so I had better keep my weight in the middle of this conoe.) Jensen summarizes this final stage as "talking to one's self in relevant ways when confronted with something to be learned, a problem to be solved, or a concept to be attained. In [reflective] adults the process becomes quite automatic and implicit....(Jensen in Meichenbaum, 1977, p.29).

Stop and think

At its most basic, to be reflective is to effectively stop and think. To be at the other pole is to be impulsive. Typically, the impulsive child fails to stop and think before reacting to an unfamiliar situation. The child fails to cognitively represent the situation in such a way that causal relationships or consequences are fully considered.

The construct of cognitive impulsivity was given prominence in the 1960s by Jerome Kagan and his associates (Kagan, Moss and Siegal, 1963; Kagan, 1966). In a series of studies with young children, they noted reliable differences in the manner in which their subjects went about solving problems that contained ambiguity or uncertainty. Children who went about their tasks quickly while making many errors were characterized as impulsive. Those who took more time and made few errors were described as reflective.

It has been estimated that up to a third of young school age children are impulsive to the extent that learning is impaired, though this proportion will decease with maturity (Messer, 1976). In the meantime, the child may be underachieving in school (Weithorn, Kagen and Marcus, 1984). Associated characteristics may include hyperactive behaviour and attention problems; an inability to delay gratification, to control aggresive behaviour and to engage in effective problem-solving skills (Ainslie, 1975; Kendall and Finch, 1979; Douglas and Peters, 1979; Feuerstein, 1980). For some portion of these children, academic and social functioning will be impaired to the extent that delinquency may follow (Campbell, Andrews and Fuller, 1983).

If we use a language deficit hypothesis, we have a useful approach to understanding and helping the impulsive student, and in particular those learning disabled and deaf

students with language deficiencies. These students may be deficient in either or both language and mediational skills that contribute to reflective thought. Covert language and past experience may not used by the student to effectively monitor and self-regulate behaviour or, in the approach used above, to think through the causal relations and consequences of behaviour. One can imagine a child who fails to inhibit an impulsive and, in the long run, dysfunctional response to a situation. Using our language deficit model, we can say that the child does not comprehend the consequences of the response; or would comprehend the likely consequences had time been given to stop and think through the response; or does not use previous experience or knowledge to generate alternative ways of behaving in the situation.

This description would characterize many deaf and learning disabled children. Reseachers concur that among profoundly deaf children the most commonly occurring traits are emotional immaturity, lack of self-reflection and impusiveness (Freeman, 1979; Altshuler et al., 1976; Meadow and Trybus, 1979). This is particularly evident among deaf children of hearing parents who did not ensure the early development of alternate communication skills. Similarly, impulsivity is a term often used in research to describe children who are identified as having a learning disability (Nagel and Thwaite, 1979). And it is associated with other characteristics often used to describe various learning disabilities: field-dependence, locus of control, attention deficit and hyperactivity (Campbell and Davies, 1981; Campbell, Neill and Dudley, 1986).

Impulsive children and adolescents (and adults) will likely exhibit a pattern of characteristics in their behaviour. Certainly, not all persons will exhibit identical characteristics, but the following review may help with identification:

- a tendency to work quickly and to make errors.
- an inability to attend to and to sort out relevant features or information given a problem situation.
- an inability to carefully analyze a problem, choosing instead a global or holistic approach.
- being easily distracted by others or by one's own thoughts, difficulty with concentration.
- seeking stimulation and sensation, taking the form of irrelevant and off-task talk and movement.

- seeking cues on what to do from others and depending on others for direction.

- an inability to deal with large amounts of information or instructions at one time.

- an inability to think through alternate courses of action and their consequences, or alternate solutions to a problem and to evaluate their correctness.

- a reluctance to delay gratification.

- a poor self-concept as a student resulting from repeated frustration and failure.

Pause for reflection

Thinking through the answer to a problem should be like going through a more or less complex maze. An outcome should not be arrived at simply by making one turn. There should be a number of alternative directions, blind alleys, efficient and inefficient paths to consider. The impulsive child with limited language and mediational repertoire takes the single turn in the maze by simply reacting with the first available response, perhaps supplied by a superficial memory, the suggestion of a peer or simply doing what appears obvious or easy. The absense of sufficient language and exploratory problem-solving strategies deprive the student of rich cognitive maps required for reflective thought.

Self-instuction training is an approach to teaching reflective thought by providing the student with richer maps. It gives students strategies for "listening to" or monitoring their own thinking while offering a better assortment of cognitive tools to work with. It is a cognitive-behavioural approach that has had promising results in recent years (Messer, 1976; Kendall and Finch, 1979; Hobbs et al., 1980, Thompson, Teare and Elliot, 1983).

Self-instruction training normally requires the child to overtly verbalize a given problem, alternative approaches to resolution, and attentional strategies (Meichenbaum, 1975, 1979; Meichenbaum and Asarnow, 1979). Self-instruction training forces the child to employ overt verbal mediation for which he or she has the capacity but perhaps not the practice or motivation. Language becomes a mediator for self-monitoring and regulation and, in so doing, performs a number of important functions: attention is directed towards relevant cues or events, automatic responses to the environment are interrupted, the opportunity arises to survey and select alternative courses of action, and appropriate rules and principles of behaviour may be recalled and focused on the particular event

providing a planned strategy for action (Meichenbaum, 1977, 1979).

There is certainly no one best way to date to go about cognitive behaviour modification with particular emphasis on self-instruction training. Each group of students or clients and other factors will determine the approach in a given setting. However, on the basis of past research, general techniques can be offered that should increase the likelihood of success. The following discussion is drawn from experimental studies that have demonstrated significant improvement on dependent variables with various populations. For example:

impulsive/learning disabled preadolescent
Locher,1985
Camp et al., 1977
Meichenbaum, 1977, 1979

impulsive deaf adolescent
Campbell, Neill & Dudley, 1986

high-risk/ impulsive/ disturbed adolescent
Snyder & White, 1979
Kendall & Wilcox, 1980
Campbell, Andrews & Fuller, 1983

PROBLEM-SOLVING ACTIVITIES Students are engaged in a series of problem-solving activities that serve as vehicles for learning and practicing reflective ways of thinking. The content of the problems should, of course, be of interest to the students and sufficiently difficult and ambiguous to be challenging but not cause excesssive frustration. The problems may be wide ranging - from word problems in mathematics, to problems in a social context, to drawing pictures on a computer. All the better if these activities are embedded in the on-going curriculum.

MODELLING It is essential that the teacher be a model of reflective problem-solving for the students. The teacher works through sample problems or tasks and demonstrates out loud the various approaches and strategies the students are to learn.

STRATEGIES The goal of self-instruction training is to have the student eventually assimilate problem-solving strategies into a cognitive repertoire thereby enhancing the effectiveness of language and mediation activity. Strategies can be derived from three levels of cognitive activity: input, elaborarion and output. For example:

Input Do you/I understand the question or problem?
Do you/I need more information?

Can you/I put the problem in your/my own words?

Elaboration — What do you/I know already or remember that can help? What is familiar?
If the problem is complex, do you/I need to write down a plan?
In what form will your/my answer be?
Do you/I need more information?
What are some possible answers?

Output — Which answer or solution seems most reasonable and why?
Do you/I need to think of more possibilities?
Is your/my plan working or do you/I need to revise it?

SELF-VERBALIZATION Just as the teacher models approaches to reflective thought out loud, students are encouraged to do the same. They are told to think out loud, to talk to themselves in relevant ways when doing their work using questions and statements such as those above. This procedure has a number of important advantages. It ensures that fast and random thinking is slowed down. It offers both the student and the teacher a "window" on the student's thinking so that both can see the sources of errors.

TRAINING AND FEEDBACK These procedures attempt to put the student in control, to regulate and monitor one's own thinking and activity. During problem-solving activities, the teacher listens to and observes the student. The teacher has the student practice with new ideas and strategies for solving the problem. This may be done individually or in small groups. Over time, the teacher's interventions are reduced as the student continues to learn, rehearse and practice these new ways of thinking. In time, it is the student's own self-instruction rather than outside intervention that directs thought and action. Salient feedback is essential for the student. In two studies by the author, problem-solving sessions were videotaped and later played back for the student to view and discuss with the teacher.

TIME TO SUCCEED One message rings clear from studies that attempt to modify complex human behaviour. Interventions must be given time to succeed. There is no known quick fix. Programs should be planned for at least two or three months with the student engaged in specific self-instruction activities for two or three sessions per week. Further, the transfer effects of such programs will be enhanced if its features are reinforced in many aspects of the student's daily life - in and out of the classroom.

* * *

In a very real sense, it is the central mission of education to help students realize and increase the effectiveness of their cognitive processes. And as implied by Binet in the quote at the outset of this paper, it is the role of the educator to modify those processes when found deficient. For the student who is at risk, this mission is all the more imperative.

References

Ainslie, G. (1975). Specious reward: A behavioural theory of impulsiveness and impulse control. Psychological Bulletin, 82, 463-96.

Altshuler, K., Deming, E., Vollenweider, J., Rainer, J. & Tendler, R. (1976). Impulsivity and profound early deafness: A cross cultural inquiry. American Annals of the Deaf, 121, 331-45.

Camp, B., Blom, G. Herbert, F. & Van Doorninck, H. (1977) "Think aloud", A program for developing self-control in young aggressive boys. Journal of Abnormal Psychology, 5, 157-69.

Campbell, D., Andrews, W. & Fuller, K. (1983). Adolescent Impulsivity and Self-Instruction Training: A Pilot Study. Review and Evaluation Bulletin, 6 (4). Toronto: Ontario Ministry of Education.

Campbell, D., Neill, J. & Dudley, P. (1986). Computer aided self-instruction training with impulsive deaf students and learning disabled students: Teaching reflective thought. Toronto: Ministry of Education.

Donaldson, M. (1979). Children's Minds. New York: Norton.

Douglas, V. & Peters, K. (1975). Toward a clearer definition of the attentional deficit of hyperactive children. In G. Hale & M. Lewis (Eds.), Attention and Cognitive Development. New York: Plenum Press, 1979.

Feuerstein, R. (1980). Instrumental Enrichment. Baltimore: University Park Press.

Freeman, R. (1979). Psychosocial problems associated with childhood hearing impairment. In L. Bradford, & W. Harding, (Eds.), Hearing and Hearing Impairment. New York: Grune and Stratton.

Hobbs, S., Mogin, .L., Tyroler, M. & Lahey, B. (1980). Cognitive behaviour therapy with children: Has clinical utility been demonstrated? Psychological Bulletin, 87, 147-65.

Kagan, J., Moss, H. & Sigel, I. (1963). Psychological significance of style of conceptualization. In J. Wright & J. Kagan (Eds.), Basic Cognitive Processes in Children. Monographs of the Society for Research in Child Development, 28, (Serial No. 86).

Kagan, J., Rosman, B., Day, D., Albert, J. & Phillips, W. (1964). Information processing in the child: Significance of analytic and reflective attitudes. Psychological Monographs General and Applied, 78, 1-37.

Kagan, J. (1966). Reflection-impulsivity: The generality and dynamics of conceptual tempo. Journal of Abnormal Psychology, 71, 17-24.

Kendall, P. & Finch A. (1979). Developing nonimpulsive behaviour in children: Cognitive-behavioural strategies for self-control. Cognitive-Behavioural Intervention: Theory, Research and Procedures. New York: Academic Press.

Kendall, P. & Wilcox, L. (1980) Cognitive-behavioural treatment for impulsivity: Concrete versus conceptual training in non-selfcontrol problem children. Journal of Consulting and Clinical Psychology, 48, 80-91.

Locher, P. (1985). Use of haptic training to modify impulse and attention control deficits of learning disabled children. Journal of Learning Disabilities, 18, 89-93.

Mahoney, M. & Thoresen, C. (1974). Self-Control: Power to the Person. Belmont, Ca: Brooks Cole.

Meadow, K. & Trybus, R. (1979). Behavioural and emotional problems of deaf children: An overview. In L. Bradford, & W. Harding, (Eds.), Hearing and Hearing Impairment. New York: Grune and Stratton.

Meichenbaum, D. (1977). Cognitive-Behaviour Modification: An Integrative Approach. New York: Plenum Press.

Meichenbaum, D. & Goodman, J. (1971). Training impulsive children to talk to themselves: A means of developing self-control. Journal of Abnormal Psychology, 77, 115-26.

Meichenbaum, D. & Asarnow, J. (1979). Cognitive-behaviour modification and metacognitive development: Implications for the classroom. In P. Kendall & S. Hollen (Eds.), Cognitive-Behavioral Interventions: Theory , Research and Procedures. New York: Academic Press.

Messer, S. Reflection-impulsivity: A review. (1976). Psychological Bulletin, 83, 1026-52.

Nagel, R. & Thwaite, B. (1979). Are learning disabled children more impulsive? A comparison of learning disabled and normal-achielving children on Kagen's M.F.F. Test. Psychology in the Schools, 16, 351-55.

Papert, S. (1980). Mindstorms: Children, Computers and Powerful Ideas. New York: Basic Books.

Snyder, J. & White, M. (1979). The use of cognitive self-instruction in the treatment of behaviourally disturbed adolescents. Behaviour Therapy, 10, 227-35.

Thompson, R.W., Teare, J.F. & Elliott, S.H. (1983). Impulsivity: From theoretical constructs to applied interventions. Journal of Special Education, 17, 157-69.

Vygotsky, L. (1962). Language and Thought. New York: Wiley.